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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,207	05/20/2005	Jose Beitia	P08411US00/DEJ	6466
881	7590	12/05/2006	EXAMINER	
STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314			DOUGHERTY, THOMAS M	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/511,207

**Applicant(s)**

BEITIA, JOSE

**Examiner**

Thomas M. Dougherty

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 505.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Aoto et al. (US 2002/0158224) Aoto et al. teach (see paragraph [0056]) a method for producing a mechanical resonator with a planar monolithic vibrating structure machined in a crystalline material, characterized in that:- when the crystalline material is chosen from crystalline materials of trigonal (1) or trigonal (2) or **hexagonal structure, this material is cut in the [001] plane** or, when it is chosen from materials of cubic structure (silicon excluded), it is cut in the [111] plane, and the 2nd-order vibration mode is then used, or else - when the crystalline material is chosen from crystalline materials of tetragonal (1) or tetragonal (2) or **hexagonal structure, this material is cut in the [001] plane**, or, when it is chosen from materials of cubic structure, it is cut in the [001] or [100] plane (silicon excluded) or [010] plane, and the 3rd-order vibration mode is then used, whereby the resonator exhibits natural material-based frequency isotropy ( $\Delta f_m = 0$ ).

Aoto et al. teach (see paragraph [0056]) a mechanical resonator with a planar monolithic vibrating structure machined in a crystalline material, characterized in that, for the resonator to exhibit material-based frequency isotropy ( $\Delta f_m = 0$ ), the crystalline

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material is chosen from the following: a) a crystalline material of tetragonal (1) or tetragonal (2) structure cut in the [001] plane, the resonator then exhibiting material-based frequency isotropy in the 3rd-order vibration mode; b) a crystalline material of trigonal (1) or trigonal (2) structure cut in the [001] plane, the resonator then exhibiting material-based frequency isotropy in the 2nd-order vibration mode; c) **a crystalline material of hexagonal structure cut in the [001] plane, the resonator then exhibiting material-based frequency isotropy in both the 2nd- and 3rd-order vibration modes**; and d) a crystalline material of cubic structure - cut in the [111] plane (silicon excluded), the resonator then exhibiting material-based frequency isotropy in the 2nd-order vibration mode or - cut in the [001], [100] (silicon excluded) or [010] planes, the resonator then exhibiting material-based frequency isotropy in the 3rd-order vibration mode.

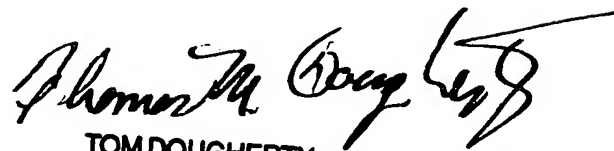
### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art reads on at least some aspects of the claimed invention. Lee et al. (US 2003/0015130) note that Barium Titanate is hexagonal when formed by the TSSG method.

Direct inquiry to Examiner Dougherty (571) 272-2022.

tmd  
tmd

November 14, 2006

  
TOM DOUGHERTY  
PRIMARY EXAMINER